

U.S. Environmental Protection Agency  
Office of Pollution Prevention and Toxics

**INTERPRETIVE GUIDANCE FOR THE FEDERAL PROGRAM**  
**TSCA SECTIONS 402/403**

FINAL 03/14/02

**Q/A(10) Definition of Wipe Sample**

**“Work practice standards”**

**“403 rule”**

**§745.63 Definitions.**

***“Wipe sample” means a sample collected by wiping a representative surface of known area, as determined by ASTM E1728, “Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques,” or equivalent method, with an acceptable wipe material as defined in ASTM E 1792, “Standard Specification for Wipe Sampling Materials for Lead in Surface Dust.”***

**§745.65 Lead-based paint hazards.**

***(b) Dust-lead hazard. A dust-lead hazard is surface dust in a residential dwelling or child-occupied facility that contains a mass-per-area concentration of lead equal to or exceeding 40 µg/ft<sup>2</sup> on floors or 250 µg/ft<sup>2</sup> on interior window sills based on wipe samples.***

**§745.227 Work practice standards for conducting lead-based paint activities: target housing and child-occupied facilities.**

**(h) Determinations.**

***(3) A dust-lead hazard is present in a residential dwelling or child occupied facility:***

***(i) In a residential dwelling on floors and interior window sills when the weighted arithmetic mean lead loading for all single surface or composite samples of floors and interior window sills are equal to or greater than 40 µg/ft<sup>2</sup> for floors and 250 µg/ft<sup>2</sup> for interior window sills, respectively;***

***(ii) On floors or interior window sills in an unsampled residential dwelling in a multi-family dwelling, if a dust-lead hazard is present on floors or interior window sills, respectively, in at least one sampled residential unit on the property; and***

***(iii) On floors or interior window sills in an unsampled common area in a multi-family dwelling, if a dust-lead hazard is present on floors or***

***interior window sills, respectively, in at least one sampled common area in the same common area group on the property.***

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**Q1: The definition of “wipe sample” relies on two very specific American Society of Testing Materials (ASTM) standards. In relying on the ASTM standards, did EPA intend to prevent the use of EPA’s and HUD’s standards for wipe samples?**

**A1:** No. In the proposed rule, EPA defined “wipe sample” as

“...a sample collected by wiping a representative surface of known area with an acceptable wipe material (e.g., moist towelette).”

63 FR 30302, 6/3/98. EPA received public comments that more specific criteria for the wipe should be included. EPA agreed that more definitive language was necessary to explain “acceptable” and in the final rule provided reference to the two ASTM standards. However, in referencing the second ASTM standard, EPA neglected to indicate “or equivalent” at the end of the sentence as it did after the first standard. If EPA had intended to change the definition from reference to a general term (moist towelette) in the proposed rule to such a specific standard (ASTM E 1792) in the final rule, EPA would have included discussions in the final rule preamble and the Response to Comments to explain such a significant change. However, it was only EPA’s intention in the final rule to illustrate what would be meant by “acceptable” but not to restrict “acceptable” only to ASTM Standard E 1792.

In establishing work practice standards for lead-based paint activities at §745.227, EPA was not prescriptive but instead required that most activities be conducted using appropriate documented methodologies. For example, §745.227(c)(3) requires that dust samples be taken using documented methodologies that incorporate adequate quality control procedures. At §745.227(a)(3), EPA lists documented methodologies that are appropriate for the work practice standards, including the HUD Guidelines and certain EPA methodologies, and also states that “other equivalent methods” are acceptable.

In the case of wipe samples, EPA would consider documented methodologies to include both the description of acceptable wipe materials found in the *HUD Guidelines for Evaluation and Control of Lead-Based Paint Hazards in Housing*, June 1995 edition, at Appendix 13.1, “Wipe Sampling for Settled Lead-Contaminated Dust” and the discussion of wipes on pp. 15-16 of EPA’s document

*Residential Sampling for Lead: Protocols for Dust and Soil Sampling*, March 1995, EPA 747-R-95-001.

In evaluating wipes for acceptability, EPA believes that four characteristics are most important. The wipe material must have a low lead level, sufficient durability, and sufficient moisture content. Additionally, there must be good lead recovery from laboratory digestion of lead-spiked wipe samples (see attached table, "Comparison of Wipe Sample Requirements"). Other aspects of the wipes are less important.

To illustrate how EPA equates a more general methodology with a very specific standard, EPA has included below a table comparing the requirements for wipes from Appendix 13.1: "Wipe Sampling for Settled Lead-Contaminated Dust" of HUD's "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," (June 1995) with the requirements of ASTM Standard E 1792, "Standard Specification for Wipe Sampling Materials for Lead in Surface Dust.". The two sets of requirements are intended for different primary users. HUD's Appendix 13.1 is intended for persons who are going to sample for lead in dust. ASTM Standard E 1792 is intended for manufacturers to evaluate the performance of wipe sampling materials for lead in surface dust. Appendix 13.1 does not require that every lot be tested. Instead, it provides names of brands considered to be acceptable wipe media and indicates that other brands are acceptable if equivalence in both lead contamination (blank analysis) and laboratory digestion recoveries (spiked sample analysis) can be established.

EPA believes that the four characteristics of wipes that it considers to be most important (lead level, durability, moisture content, and lead recovery) are sufficiently similar for the ASTM and HUD methods to be considered "equivalent methods" as well as "documented methodologies". It is also important to note that this information can be established for a particular brand of wipe either before or after it is used for sampling, should its "equivalency" be questioned.

EPA recognizes that differences in wipe characteristics, such as size or thickness, can affect the methodology for use of a specific wipe in sample collection. For this reason, EPA recommends that training providers discuss this issue in their courses and acquaint their students with examples of the diversity of wipes and sampling methodologies during the hands-on portion of their courses.

Until EPA is able to amend the rule, EPA will use this document as guidance when determining whether or not wipe samples are equivalent.

## COMPARISON OF WIPE SAMPLE REQUIREMENTS

<u>Criteria</u>	<u>HUD Guidelines, 1995 ed., Appendix 13.1</u>	<u>ASTM E 1792 - 96a</u>
<b>Wipe defined</b>	Disposable wipe that meets criteria	3.1.1, Disposable, porous paper (cellulosic) towelette moistened w/wetting agent
<b><u>Lead level</u></b>	Low, <5µg/wipe; must not contain aloe	6.1.1, <5µg/wipe
<b><u>Durability</u></b>	Durable, does not tear easily; do not use Whatman filters	6.1.2, Rugged, use on 1000 cm <sup>2</sup> surface area of smooth surface w/o tearing
<b><u>Moisture content</u></b>	Must remain moist during sampling	6.1.3, Moisture content, coefficient of variation less than or equal to 25%, 15 samples/lot
<b><u>Lead recovery</u></b>	Can be digested in lab. Blank must have less than or equal to 25 µg Pb/wipe. Shown to yield 80-120% recovery rates from leaded-dust spiked samples	6.1.7, 100 +/- 10%, 95% CI, recovery from wipes spiked w/NIST SRM; 7.2, 30 spiked & 30 unspiked samples
<b>Size</b>	Not specified	6.1.4, 10 by 10 cm to 20 by 20 cm
<b>Thickness</b>	Single thickness; do not use extra thick or multi-ply wipes	6.1.5, Dry wipe, average 0.005 to 0.10 cm, 15 samples/lot 6.1.6, Coefficient of variation in mass less than or equal to 5%, 15 samples/lot
<b>Collection efficiency</b>	Not specified	6.1.8 & 7.3, Specifications
<b>Packaging</b>	Not specified	8. Info requirements
<b>Manufacturer responsibility</b>	None. But, brands w/o evaluation info must be tested by persons before use.	7.1, Testing 9. Quality assurance 10. Recordkeeping
<b>Acceptable brands</b>	Specified	Not specified
<b>Intended users of requirements</b>	Persons sampling for lead in dust.	Manufacturers evaluating wipe materials for sampling lead in dust. Other persons comparing performances of wipes.

